

IN THE CLAIMS:

Please amend the claims, as follows:

Claims 1-40 (Cancelled)

41. (Currently Amended) A method for detecting or diagnosing cancer or cellular abnormalities, said method comprising the steps of:

reacting a sample of body fluid or tissue likely to contain antibodies with one or more protein sequences or peptides isolated from the E2, E6 and E7 early coding regions region of human papillomavirus (HPV) types 16, 18, 31, 33, 35, 45, 51, 52, 56 and 58 selected from the group consisting of ~~an E2 early coding region of HPV 18 as set forth in SEQ. ID. NO.: 1, an E2 early coding region of HPV 16 as set forth in SEQ. ID. NO.: 2, an E2 early coding region of HPV 16 as set forth in SEQ. ID. NO.: 3, an E6 early coding region of HPV 16 as set forth in SEQ. ID. NO.: 4[,] and an E6 early coding region of HPV 18 as set forth in SEQ. ID. NO.: 5, an E7 early coding region of HPV 16 as set forth in SEQ. ID. NO.: 6, an E7 early coding region of HPV 16 as set forth in SEQ. ID. NO.: 7 and an E7 early coding region of HPV 18 as set forth in SEQ. ID. NO.: 8;~~

forming an antibody-peptide complex comprising at least one of said isolated protein sequences or peptides and said sample antibodies; and

detecting said antibody-peptide complex, wherein detecting the antibody-peptide complex indicates cancer or cellular abnormality, wherein said cellular abnormalities are selected from the group consisting of dysplasias, koilocytosis, hyperkeratosis, precancerous conditions, intraepithelial neoplasias, intraepithelial lesions, high-grade dysplasias, invasive cancers, malignant cancers, premalignant cells, and precancerous cells.

42. (Cancelled)

43. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said isolated protein sequence or peptide comprises one or more additional glycine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

44. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said isolated protein sequence or peptide comprises one or more additional asparagine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

45. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said isolated protein sequence or peptide comprises a combination of glycine and asparagine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

46. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said cysteine residues of said isolated protein sequence or peptide is substituted with a carboxymethylcysteine residue.

47. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said diagnostic method is directed to detecting or diagnosing an HPV epitope.

48. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said HPV epitope is an antigenic region against which antibody reactivity would occur.

49. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated cell abnormality.

50. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated precancerous or premalignant condition.

51. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated cancer.

52. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said diagnostic method is directed to detecting or diagnosing cervical dysplasia.

53. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said diagnostic method is directed to detecting or diagnosing cervical carcinoma.

54. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said diagnostic method is directed to detecting or diagnosing cervical cellular abnormalities selected from the group consisting of koilocytosis, hyperkeratosis, precancerous conditions encompassing intraepithelial lesions, high-grade dysplasias, invasive cancers and malignant cancers.

55. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said diagnostic method is directed to detecting or diagnosing adenocarcinoma of the uterine cervix.

56. (Cancelled)

57. (Cancelled)

58. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said protein sequence or peptide isolated from said HPV E6 coding region comprises detection or diagnosis of premalignant cell transformation, a precancerous condition or cancer.

59. (Cancelled)

60. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said detection step further comprises the step of visually inspecting said antibody-peptide complex for a color change.

61. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 41, wherein said detection step further comprises inspecting said antibody-peptide complex for physical-chemical changes.

62. (Original) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 61, wherein said inspection step further comprises inspecting said antibody-peptide complex using a spectrophotometer.

63. (New) A method for detecting or diagnosing cancer or cellular abnormalities, said method comprising the steps of:

reacting a sample of body fluid or tissue likely to contain antibodies with a protein sequence or peptide isolated from an E6 early coding region of HPV 16 as set forth in SEQ. ID. NO.: 4;

forming an antibody-peptide complex comprising the isolated protein sequence or peptide and said sample antibodies; and

detecting said antibody-peptide complex, wherein detecting the antibody-peptide complex indicates cancer or cellular abnormality, wherein said cellular abnormalities are selected from the group consisting of dysplasias, koilocytosis, hyperkeratosis, precancerous conditions, intraepithelial neoplasias, intraepithelial lesions, high-grade dysplasias, invasive cancers, malignant cancers, premalignant cells, and precancerous cells.

64. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said isolated protein sequence or peptide comprises one or more additional glycine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

65. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said isolated protein sequence or peptide comprises one or more additional asparagine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

66. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said isolated protein sequence or peptide comprises a combination of glycine and asparagine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

67. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said cysteine residues of said isolated protein sequence or peptide is substituted with a carboxymethylcysteine residue.

68. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said diagnostic method is directed to detecting or diagnosing an HPV epitope.

69. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said HPV epitope is an antigenic region against which antibody reactivity would occur.

70. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated cell abnormality.

71. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated precancerous or premalignant condition.

72. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated cancer.

73. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said diagnostic method is directed to detecting or diagnosing cervical dysplasia.

74. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said diagnostic method is directed to detecting or diagnosing cervical carcinoma.

75. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said diagnostic method is directed to detecting or diagnosing cervical cellular abnormalities selected from the group consisting of koilocytosis, hyperkeratosis, precancerous conditions encompassing intraepithelial lesions, high-grade dysplasias, invasive cancers and malignant cancers.

76. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said diagnostic method is directed to detecting or diagnosing adenocarcinoma of the uterine cervix.



77. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said protein sequence or peptide isolated from the E6 early coding region comprises detection or diagnosis of premalignant cell transformation, a precancerous condition or cancer.

78. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said detection step further comprises the step of visually inspecting said antibody-peptide complex for a color change.

79. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 63, wherein said detection step further comprises inspecting said antibody-peptide complex for physical-chemical changes.

80. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 79, wherein said inspection step further comprises inspecting said antibody-peptide complex using a spectrophotometer.

81. (New) A method for detecting or diagnosing cancer or cellular abnormalities, said method comprising the steps of:

reacting a sample of body fluid or tissue likely to contain antibodies with a protein sequence or peptide isolated from an E6 early coding region of HPV 18 as set forth in SEQ. ID. NO.: 5;

forming an antibody-peptide complex comprising the isolated protein sequence or peptide and said sample antibodies; and

detecting said antibody-peptide complex, wherein detecting the antibody-peptide complex indicates cancer or cellular abnormality, wherein said cellular abnormalities are selected from the group consisting of dysplasias, koilocytosis, hyperkeratosis, precancerous conditions, intraepithelial neoplasias, intraepithelial lesions, high-grade dysplasias, invasive cancers, malignant cancers, premalignant cells, and precancerous cells.

82. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said isolated protein sequence or peptide comprises one or more additional glycine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

83. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said isolated protein sequence or peptide comprises one or more additional asparagine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

84. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said isolated protein sequence or peptide comprises a combination of glycine and asparagine residues added at a carboxyl terminal residue of said isolated protein sequence or peptide.

85. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said cysteine residues of said isolated protein sequence or peptide is substituted with a carboxymethylcysteine residue.

86. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said diagnostic method is directed to detecting or diagnosing an HPV epitope.

87. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said HPV epitope is an antigenic region against which antibody reactivity would occur.

88. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated cell abnormality.

89. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated precancerous or premalignant condition.

90. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said diagnostic method is directed to detecting or diagnosing an HPV associated cancer.

91. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said diagnostic method is directed to detecting or diagnosing cervical dysplasia.

92. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said diagnostic method is directed to detecting or diagnosing cervical carcinoma.

93. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said diagnostic method is directed to detecting or diagnosing cervical cellular abnormalities selected from the group consisting of koilocytosis, hyperkeratosis, precancerous conditions encompassing intraepithelial lesions, high-grade dysplasias, invasive cancers and malignant cancers.

94. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said diagnostic method is directed to detecting or diagnosing adenocarcinoma of the uterine cervix.

95. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said protein sequence or peptide isolated from the E6 early coding region comprises detection or diagnosis of premalignant cell transformation, a precancerous condition or cancer.

96. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said detection step further comprises the step of visually inspecting said antibody-peptide complex for a color change.

97. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 81, wherein said detection step further comprises inspecting said antibody-peptide complex for physical-chemical changes.

98. (New) The method for detecting or diagnosing cancer or cellular abnormalities as defined in claim 97, wherein said inspection step further comprises inspecting said antibody-peptide complex using a spectrophotometer.